

REMARKS / ARGUMENTS

1. Status of the Claims:

Claims 1-4, 6-41, 79 and 80 were pending prior to this amendment. Claims 22-23, 26, 29-36 and 79-80 are cancelled herein. Thus, Claims 1-4, 6-21, 25, 27-28, 37-41 remain pending after this amendment.

2. The Miscellaneous Objections Have Been Addressed:

In the December 9, Official Action the examiner objected to the spelling of “leveller” in certain claims. Claims 1, 7, 10-15 and 18-21 have amended herein to reflect the American spelling “leveler.” Withdrawal of the objection is respectfully requested.

Regarding the objection to Claims 26, 29-36 and 79-80, which were previously withdrawn as directed to non-elected species, applicants have now cancelled the claims. Withdrawal of the objection is thus warranted.

3. The Rejections Under 112 Have Been Addressed:

Claims 22 and 23 have been cancelled, thus rendering the rejections raised by the examiner under 112, 1st ¶ as moot.

Claims 20 and 21 stand rejected under 35 USC 112 as indefinite. Applicant has amended claims 19, 20 and 21 to clarify the nature of the invention claimed. As amended, one of ordinary skill would readily understand the claimed subject matter of claims 19-21, now drafted to relate to the distance between the leveler blade(s) and the first side of the perforated plate, and thus the powder level.

Withdrawal of the rejection is respectfully requested as the language of claims 19, 20 and 21 should be deemed “definite” within the meaning of 35 USC 112.

4. The 103 Rejection Over Stewart US 3,718,164 Is Traversed, As There is No Motivation to Modify Stewart to Incorporate a Leveler Blade with a Forward Acute Angle:

Stewart discloses an apparatus for feeding powders into receivers 31. The device consists of a base plate 10 containing a plurality of apertures 11. Below the base plate is a sliding plate 12, which contacts the base plate in a sealing fashion. The sliding plate has a series of passages 13, which are able to be aligned with the apertures. When aligned, the passages permit the contents of the apertures to flow through the sliding plate. When the apertures and passageways are not aligned, the sliding plate seals the apertures to allow volumetric metering of material into the apertures.

In the device, the powder to be filled into the apertures is maintained in one end of a hopper 20 of which plate 10 forms the base. The powder is drawn along the upper surface 15 of the base plate 10 by a doctoring blade 23. Charges of powder 24 are thereby introduced into the dispensing apertures 11 and made level with feed surface 21. When the sliding plate is moved such that the passageways and apertures are aligned, the powder charges are transferred by gravity into a series of funnels 30, which deliver the charges to receivers 31 positioned below the funnel. (US '164, col. 2, lines 30-62). The doctoring blade 23 is depicted as being positioned perpendicular to the base plate 10 (as in Fig. 2).

Repeatedly, the Stewart patent indicates that the significant advantage the filling system described offers is that the bulk density of the powder remains substantially unchanged through the filling process. (US '164, col. 1, lines 7-11; col. 1, lines 41-44; col.2, lines 60-62; col. 3, lines 6-10; col. 3, 45-53, see also claims 1 and 6- "without alteration of the bulk density thereof").

The examiner asserts that it would have been obvious for one of ordinary skill to modify Stewart by inclusion of a doctor blade with a forward acute angle to the sweeping path. The Examiner ignores the essential requirement for the powder feeding device in Stewart to not modify the bulk density of the powder. The perpendicular blade of Stewart is selected to accomplish this end.

As the instant application makes clear, however, a blade with an acute angle to the sweeping path compresses the powder in the hopper. (See page 2, 2nd full paragraph). Similarly, at page 9, final paragraph, providing the leveller blade with a forward acute angle results in the leveller blade applying a compressive force on the powder.

Thus, modifying the Stewart device as the examiner suggests, by employing a blade with a forward acute angle, would result in a compressed powder with a discernable greater bulk density than the material in the hopper. It would be inconceivable that the doctor blade 23 in the Stewart device would be provided with a forward acute angle as this would compress the powder, thus changing its bulk density characteristics. Nothing in Vaughn would change this.

As such, one of ordinary skill would clearly not seek to modify the Stewart reference in a fashion that would negate the advantage advocated in the Stewart reference, i.e., in the manner proposed by the examiner. No prima facie case of obviousness may be established in these circumstances. Applicant respectfully asserts that the rejection of claims 1-2, 6-17, 27-28, 37-38, and 40-41 should be withdrawn.

Concerning the rejection of claims 19-21, as being unpatentable in view of Stewart in view of Morris (US 4,850,259), Applicants point out that disclosures of both references indicate doctor blades which are perpendicular to the base surface of a powder hopper, and therefore neither meet the “forward acute angle” limitation of claim 1. For the reasons explained in detail above, one of ordinary skill would not seek to modify Stewart to incorporate a forward acute angle, as doing so would destroy the advantage of maintaining bulk density. Nothing in Morris (US 4,850,259) would change this.

Morris furthermore relates to a system where powder is spread in a hopper to a uniform thickness and doses are extracted from through the entire layer of the powder. Doctor blades, 22 and 23, assure that the thickness of the powder bed is uniform so that tubes 15 descending into the powder are uniformly filled. The bed is then raked to fill in the cavities in the powder created by the tubes extracting powder, and again leveled with the doctor blades 22 and 23. These same concerns are not present in Stewart, which gravity fills cavities in the base plate of the hopper without effecting bulk density (the cavities in the base plate being determinative of dosing volume), and where the doctor blade merely acts as a barrier to retain the as of yet un-metered powder in the hopper.

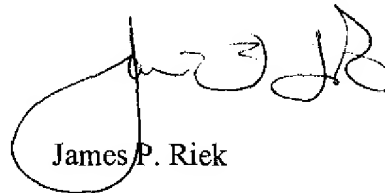
Similarly, the examiner's rejection of claims 3-4 (and 22-23, although now moot in light of the cancellation of those claims) as obvious over Stewart in view of Yamamoto, fails for the same reason. One would not seek to modify Stewart in a way which would destroy its beneficial attribute of maintaining unchanged the bulk density of a powder by use of a perpendicular doctor blade and a gravity feeding approach. Yamamoto does nothing to change this.

Conclusion

In light of these amendments, all issued raised by the examiner to date have been addressed. As such, the claims are asserted to be in a condition for allowance. Applicant requests that a timely Notice of Allowance be issued in this case. If any matters exist that preclude issuance of a Notice of Allowance, the examiner is requested to contact the applicant's representative at the number indicated below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge any fees or credit any overpayment, particularly including any fees required under 37 CFR Sections 1.16 and/or 1.17, and any necessary extension of time fees, to deposit Account No. 07-1392.

Respectfully submitted,



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